

## **Multiplication and Division with Directed numbers.**

Calculation in a pair: We have to do sign operation and operation of number.

Sign operation : Multiplication and division of sign is given below.

$$\begin{array}{l} - \times - = + \\ - \times + = - \\ + \times - = - \\ + \times + = + \end{array} \quad \left( \text{Division of sign is same as multiplication, i.e., } - \div + = - \right)$$

Operation of numbers: Do according to the sign,

Example

i)  $25 \div (-5) = -5$

Sign:  $+$   $\div$   $- = -$  (Our answer will be -ve)

Number:  $25 \div 5 = 5$

ii)  $-7 \times (-3) = +21$

Sign:  $- \times - = +$

Number:  $7 \times 3 = 21$

iii)  $-7 - (-3)$

$= -7 + 3$  (First we multiply the sign  $- \times - = +$ )

$= -4$  (Calculation in the pair)

3) Multiply the following numbers,

a)  $36 \times (-5) = \underline{180}$       b)  $-75 \times 7 = \underline{\hspace{2cm}}$       c)  $28 \times (-7) = \underline{\hspace{2cm}}$

d)  $67 \times 8 = \underline{\hspace{2cm}}$       e)  $-5 \times (-3) = \underline{\hspace{2cm}}$       f)  $47 \times (-12) = \underline{\hspace{2cm}}$

g)  $16 \times (-75) = \underline{\hspace{2cm}}$       h)  $-17 \times (-5) = \underline{\hspace{2cm}}$       i)  $-24 \times 63 = \underline{\hspace{2cm}}$

4) Divide

a)  $27 \div (-3) = \underline{-9}$       b)  $-42 \div 6 = \underline{\hspace{2cm}}$       c)  $-80 \div (-8) = \underline{\hspace{2cm}}$

d)  $35 \div 5 = \underline{\hspace{2cm}}$       e)  $-15 \div 3 = \underline{\hspace{2cm}}$       f)  $-63 \div (9) = \underline{\hspace{2cm}}$

g)  $28 \div (-7) = \underline{\hspace{2cm}}$       h)  $-60 \div 12 = \underline{\hspace{2cm}}$       i)  $-78 \div (-2) = \underline{\hspace{2cm}}$

j)  $108 \div 3 = \underline{\hspace{2cm}}$       k)  $-25 \div 5 = \underline{\hspace{2cm}}$       l)  $-70 \div (-2) = \underline{\hspace{2cm}}$

5) Simplify

a)  $8 - (-7) = \underline{\hspace{2cm}}$       b)  $-8 + (-7) = \underline{\hspace{2cm}}$       c)  $12 + (-8) = \underline{\hspace{2cm}}$

d)  $12 - (+14) = \underline{\hspace{2cm}}$       e)  $-36 - (-8) = \underline{\hspace{2cm}}$       f)  $14 - (-3) = \underline{\hspace{2cm}}$

g)  $8 - (7) = \underline{\hspace{2cm}}$       h)  $-8 + (-9) = \underline{\hspace{2cm}}$       i)  $15 + (-8) = \underline{\hspace{2cm}}$

6) Work out each of these

- a)  $-6 \times -6 + 2 =$  \_\_\_\_\_ b)  $-6 \times (-6 + 2) =$  \_\_\_\_\_ c)  $-6 \div 6 - 2 =$  \_\_\_\_\_
- d)  $12 \div (4 - 2) =$  \_\_\_\_\_ e)  $12 \div -4 + 2 =$  \_\_\_\_\_ f)  $2 \times (-3 + 4) =$  \_\_\_\_\_
- g)  $-(5)^2 =$  \_\_\_\_\_ h)  $-9^2 =$  \_\_\_\_\_ i)  $(-1 + 3)^2 - 4 =$  \_\_\_\_\_
- j)  $-(1 + 3)^2 - 4 =$  \_\_\_\_\_ k)  $-1 + 32 - 4 =$  \_\_\_\_\_ l)  $-1 + (3 - 4)^2 =$  \_\_\_\_\_

Simplification using **BIDMAS** Rule

**B** : Brackets ( Do operation inside the brackets first)

**I** : Index ( Operation of power )

**D** : Division

**M**: Multiplication

**A**: Addition`

**S**: Subtraction

Simply the followings.

- 1)  $25 - (4 + 6) \div 2 =$  20
- 2)  $72 - 60 + (35 \div 7) \div 5 =$  \_\_\_\_\_
- 3)  $25 + 18 \div (3 \times 2) =$  \_\_\_\_\_
- 4)  $37 + 14 \div 2 - (5 \times 2) =$  \_\_\_\_\_
- 5)  $74 + 40 \div (3 + 5) - 24 =$  \_\_\_\_\_
- 6)  $(24 \div 4 + 12 \div 6) \times 3 =$  \_\_\_\_\_
- 7)  $(54 \div 9 - 8 \div 2) \times 8 =$  \_\_\_\_\_
- 8)  $(64 - 24) \div (5 \times 8) =$  \_\_\_\_\_
- 9)  $(72 \div 8 + 24 \div 8) \div 4 =$  \_\_\_\_\_
- 10)  $(81 \div 9 - 8 \div 4) \times 4 =$  \_\_\_\_\_